



SASURIE COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi. Affiliated to Anna University, Chennai

Near NH544, Coimbatore Bypass, Near Vijayamangalam Tollgate, Tirupur 638056

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION - 3

RESEARCH, INNOVATION & EXTENSIONS

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

SASURIE COLLEGE OF ENGINEERING



Criteria3	Research,InnovationsandExtension	110
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KeyIndicator-3.1Resource Mobilization for Research

3.1.1. Endowmentsin the institution during the last five years (INR in Lakhs)

SUPPORTING DOCUMENTS for Endowment

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HIDEL POWER PRODUCTS PVT.LTD

PHONE NO: 90548 56392
MAIL: hidelpp@gmail.com

41/56, SAMUNDIPURAM, GANDHI
NAGAR, SALEM - 638 007.

Date: 04.01.2019

TO


The Principal,
Sasurie College of Engineering,
Vijayamangalam - 630 056.

Respected Sir/Madam,

We know about your project "Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances" and we would like to work this project with collaboration of your institution. Please provide details about the project specified here.

Thanks and Regards,




Managing Director
S. Naresh Chandra


Dr. M. VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL



SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).



SASURIE
COLLEGE OF ENGINEERING
Approved by AICTE, New Delhi
Affiliated to Anna University, Chennai

Date:03.01.2019

To

Managing Director,
Hidel Power Products Pvt.Ltd,
41/56, Samundipuram,
Gandhi Nagar,
Salem - 638 007.

Respected Sir/Madam,

Sub: Submission of project consultancy work quotation-Reg

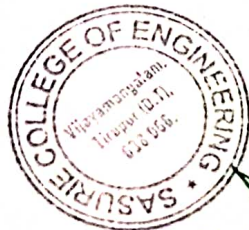
Ref: Letter dated on 04.01.2019..

Greetings from Sasurie College of Engineering!!!

With reference to your letter, our college EEE Department has prepared and wishes to send the quotation to carryout the consultancy project of your esteemed organization We would like to bring to your kind notice that, the project "Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances" may cost around Rs 75,000/- .

We assure that we will provide the required technical support from our end, for the successful completion of the project. We are looking forward your kind consideration about our consultancy project work, proposal and we request you to contact us for any queries about the design and working of project

Thanking You,



Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL



SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).

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Vijayamangalam - 638 056, Tirupur (Dt).



HIDEL POWER PRODUCTS PVT.LTD

PHONE NO: 90548 56392

MAIL: hidelpp@gmail.com

41/56, SAMUNDIPURAM, GANDHI

NAGAR, SALEM - 638 007

SANCTION LETTER

Date : 13.01.2019

To

The Principal,

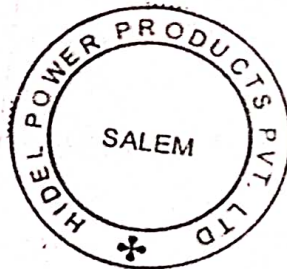
Sasurie College of Engineering,

Vijayamangalam - 638 056.

Respected Sir/Madam,

With reference to your proposal submitted dated on 08.01.2019, we are satisfied with your positive response. We approved the consultancy work of "Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances". It is also noted that consultancy amount sanctioned is Rs 70,000 as per our discussion and the work should be completed within the fixed time period. Further, I will coordinate with you in further proceedings of the project

Thanks and Regards,



Managing Director

S. Naresh Chandra

Dr. M. VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).



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SASURIE
COLLEGE OF ENGINEERING
Approved by AICTE, New Delhi
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Date : 12.02.2019

To

Managing Director,
Hidel Power Products Pvt.Ltd,
41/56, Samundipuram,
Gandhi Nagar,
Salem - 638 007.

Respected Sir/Madam,

Sub: Completion of Consultancy Project-Reg

Ref: Letter dated on 13.01.2019.

Greetings from Saurie College of Engineering!!!

We are pleased to inform you that we have successfully completed the project "Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances". Herewith, we are sending the project Proposal document. We are happy to invite your team to visit our campus for the review of the project

Looking forward your response



Dr.M.VIJAYAKUMAR M.E., Ph.D.,
PRINCIPAL



SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).

U.Py.C.S.

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Vijayamangalam - 638 056, Tirupur (Dt).

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

CONSULTANCY PROJECT WORK REPORT

Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances

SUBMITTED TO

Managing Director,



Udel Power Products Pvt.Ltd,

41/56, Samundipuram,

Gandhi Nagar,

Salem – 638 007.

DELIVERY DATE:12.02.2019


Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL
 **SASURIE COLLEGE OF ENGINEERING,**
Vijayamangalam - 635 055, Tirupur (Dt).

As requested. / Order by HIDEI. Power products.. the following are the details for your kind perusal.

1. Load Estimation

Load	Watts	Hour/Day	Number of loads	Watt-Hr
LED	10	7	5	350
BLDC Fan	30	10	3	900
LCD TV (55")	150	5	1	750
Laptop	35	6	2	420
Total Daily Wan- Hour day or Wh/day	360			2420

1.a. Load Estimation with power factor of 0.8 approximately.

Load	Watts	Hour/Day	Number of loads	Watt-Hr
LED	10	7	5	350
BLDC Fan	30	10	3	900
LCD TV (55")	150	5	1	750
Laptop	35	6	2	420
Total Daily Wan- Hour day or Wh/day	450			3025

2. Determining the inverter rating:

The require energy is supplied from a battery bank through an inverter. The total load that would be connected to the inverter is around 450 [360/0.8] Watt. Then, the inverters power handling capacity should be around 500/1000 Watt an available in market.

3. Daily energy supplied to the inverter:

The daily energy consumed by the load is 3025 Wh.

The energy input to the inverter with the efficiency of 93%, is $(3025)/(0.93) = 3252.68$ Wh, approximated to 3253 Wh.


4. Deciding the system voltage:

2 Batteries each of 12V connected in series to have typical PV system voltage as 24V.

5. Sizing of batteries:

The required charge capacity = $(3253\text{Wh}) / (24\text{V}) = 135.5\text{Ah}$

The number of batteries of rating 12V, 100 Ah with Depth of Discharge (DOD) of 70% required is $(136 \text{ Ah}) / (100 \text{ deg} * 0.70) = 1.94$


Dr. M. VIJAYARAJ ME., Ph.D.,
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 Vijayamangalam - 638 055, Tirupur (Dt).

6. Sizing of PV modules:

The energy supplied at the input of battery terminal with battery efficiency of 90% is,
 $(3025 \text{ Wh}) / (0.90) = 3361.11 \text{ Wh}$.

The total Ampere hour to be supplied by PV Panel should be, $3361.11 \text{ Wh} / (24\text{V}) = 140.04 \text{ Ah}$

The total amperes from the PV modules, $(140 \text{ Ah}) / (8 \text{ h}) = 17.5 \text{ Ampere}$.

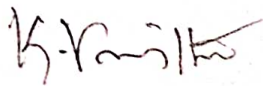
The typical value of voltage and current of 440 W_p module at maximum power point (V_m and I_m) would be about 49 V and 11 A, respectively.

The number of PV modules required is, $18/11 = 1.63$ Therefore 2 PV Panels required as per calculation.

Considering various environmental factors and solar efficiency 2 panels of rating 440 W_p , is required to deliver Total Daily Watt Hour/day of 2420.

Design Details:

SL No	Description	Rating	Quantity
1	Inverter	500 /1000 Watt	01
2	Battery	12V, 100 Ah	04
3	Solar PV Panel	440 W_p , 49 V/11 A	02



PROJECT INVESTIGATOR



PRINCIPAL



PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).



Dr. M. VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL



SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).



Date: 18.02.2019

UTILIZATION CERTIFICATE

Certified that the amount of rupees **Rs.70000** (Seventy Thousand only) was sanctioned by HIDEL Power products, Salem during the academic year (2018-2019), in favour of Department of Electrical and Electronics Engineering Sasurie College of Engineering has been fully utilized for project consultancy work titled "Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances". The purpose of amount sanctioned has been fulfilled and delivered as per conditions of grant were satisfied.

K. V. Smith

PROJECT INVESTIGATOR

U. P. C. S.

PRINCIPAL



SASURIE COLLEGE OF ENGINEERING
Vijayamangalam - 638 055, Tirupur (Dt).

M. V.

Dr. M. VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL



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Vijayamangalam - 638 055, Tirupur (Dt).